
P-Channel Enhancement Mode MOSFET

- -30V/-90A
 $R_{DS(ON)} = 4.4\text{m}\Omega(\text{typ.}) @V_{GS} = -10\text{V}$
 $R_{DS(ON)} = 7.4\text{m}\Omega(\text{typ.}) @V_{GS} = -9\text{V}$ h

(Tc=25°C Unless Otherwise Noted)				
V _{DSS}	Drain-Source Voltage		-30	V
V _{GSS}	Gate-Source Voltage		±20	V
T _J	Junction Temperature Range		-55 to 175	°C
T _{STG}	Storage Temperature Range		-55 to 175	°C
I _S	Drain Current-Continuous	Tc=25°C	-90	A
I _{DM}	Pulsed Drain Current *	Tc=25°C	-360	A
I _D	Continuous Drain Current	Tc=25°C	-90	A
		Tc=100°C	-63.5	A
P _D	Maximum Power Dissipation	Tc=25°C	60	W
		Tc=100°C	30	W
R _{θJC}	Thermal Resistance, Junction-to-Case		2.5	°C/W
R _{θJA}	Thermal Resistance, Junction-to-Ambient **		110	°C/W
E _{AS}	SinglePulsed-Avalanche Energy ***	L=0.3mH	273***	mJ

Note: * Repetitive rating; pulse width limited by max junction temperature.
 ** Surface mounted on FR-4 board.
 *** Limited by T_{Jmax}, starting T_J=25°C, L = 0.3mH, R_G= 25Ω, V_{GS} = -10V.

(Tc =25°C Unless Otherwise Noted)

BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _{DS} =-250uA	-30	-	-	V
I _{DSS}	Drain-to-Source Leakage Current	V _{DS} =-30V, V _{GS} =0V	-	-	-1	uA
		T _J =125°C	-	-	-50	uA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _{DS} =-250uA	-1.0	-1.2	-3.0	V
I _{GSS}	Gate-Source Leakage Current	V _{GS} =±20V, V _{DS} =0V	-	-	±100	nA
R _{DS(ON)*}	Drain-Source On-state Resistance	V _{GS} =-10V, I _D = -20A	2	4.4	5.5	mΩ
		V _{GS} =-4.5V, I _D = -20A	3	7.4	9.5	mΩ
V _{SD*}	Diode Forward Voltage	I _{SD} = -20A, V _{GS} =0V	-	-0.82	-1.2	V
t _{rr}	Reverse Recovery Time	I _{SD} = -20A, dI/dt=100A/us	-	26	-	ns
Q _{rr}	Reverse Recovery Charge		-	22	-	nC

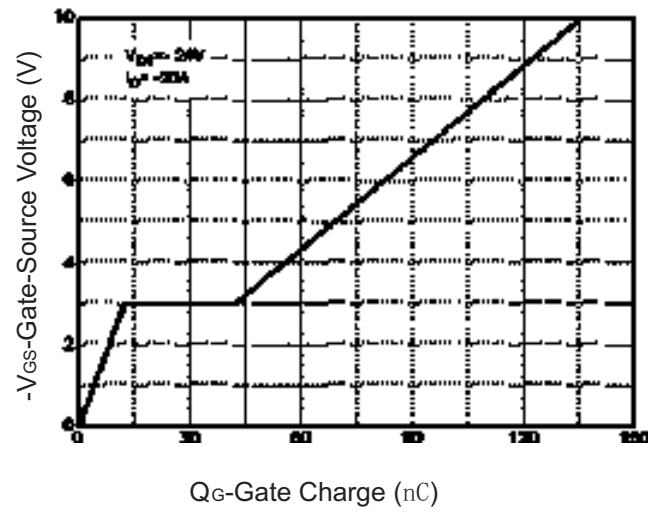
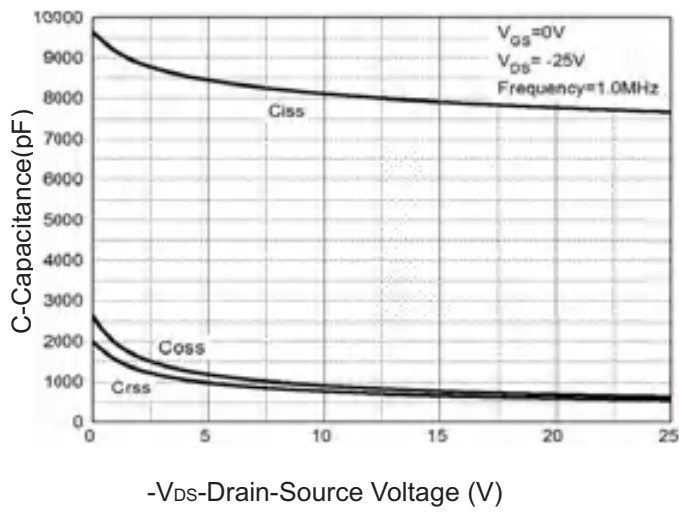
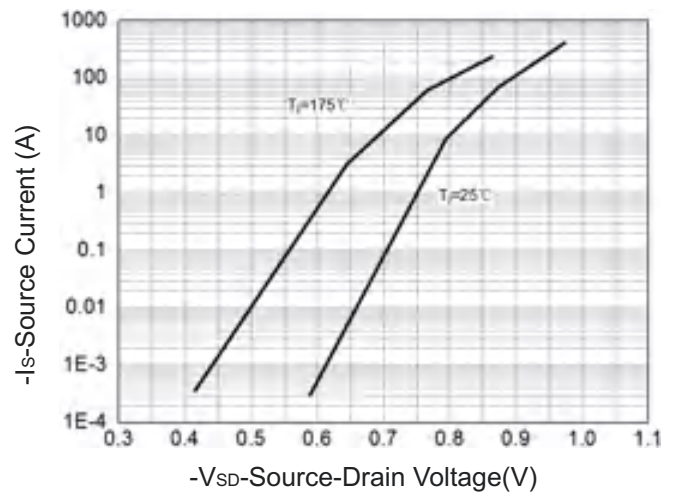
(Tc =25°C Unless Otherwise Noted)

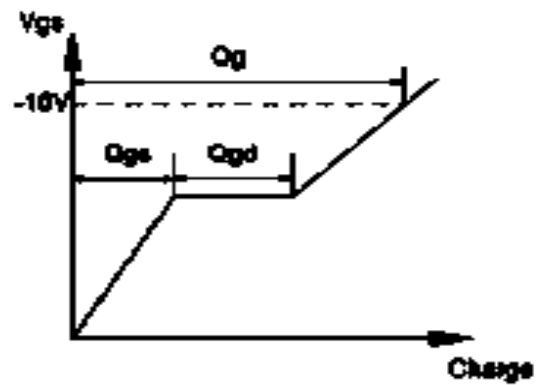
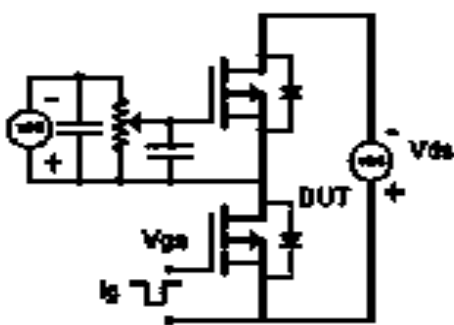
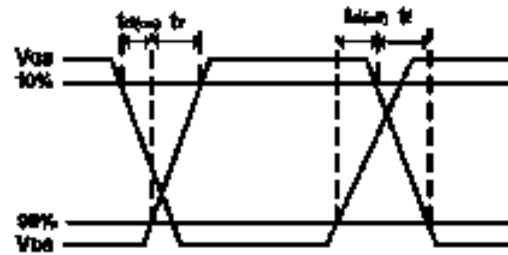
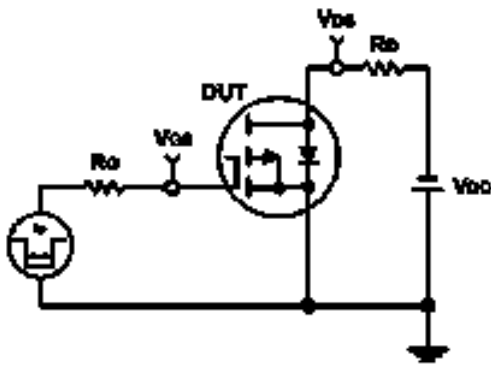
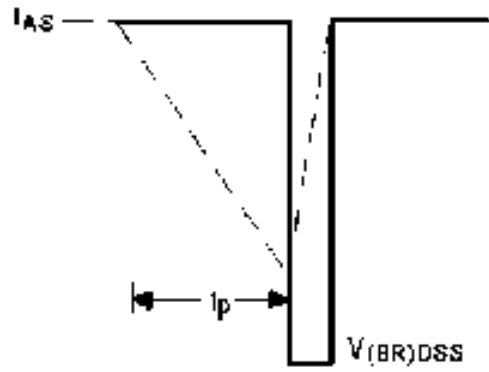
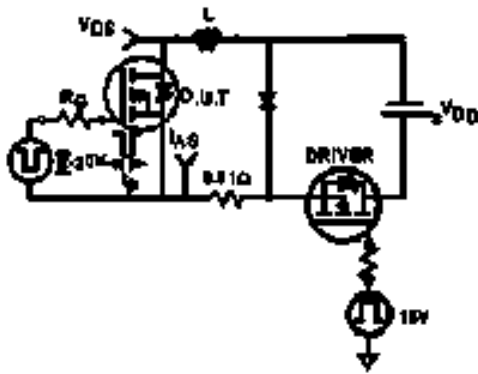
R _G	Gate Resistance	V _{GS} =0V, V _{DS} =0V, F=1MHz	-	5.2	-	Ω	
C _{iss}	Input Capacitance	V _{GS} =0V, V _{DS} =-25V, Frequency=1.0MHz	-	7660	-	pF	
C _{oss}	Output Capacitance		-	649	-		
C _{rss}	Reverse Transfer Capacitance		-	575	-		
t _{d(ON)}	Turn-on Delay Time	V _{DD} = -20V, R _G =3Ω, I _{DS} = -20A, V _{GS} =-10V	-	24	-	ns	
T _r	Turn-on Rise Time		-	19	-		
t _{d(OFF)}	Turn-off Delay Time		-	75	-		
T _f	Turn-off Fall Time		-	33	-		
Q _g	Total Gate Charge	V _{DS} = -24V, V _{GS} = -10V, I _D = -20A,	-	135.5	-	nC	
Q _{gs}	Gate-Source Charge		-	12.5	-		
Q _{gd}	Gate-Drain Charge		-	29.7	-		

Note: *Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%

Normalized On-Resistance

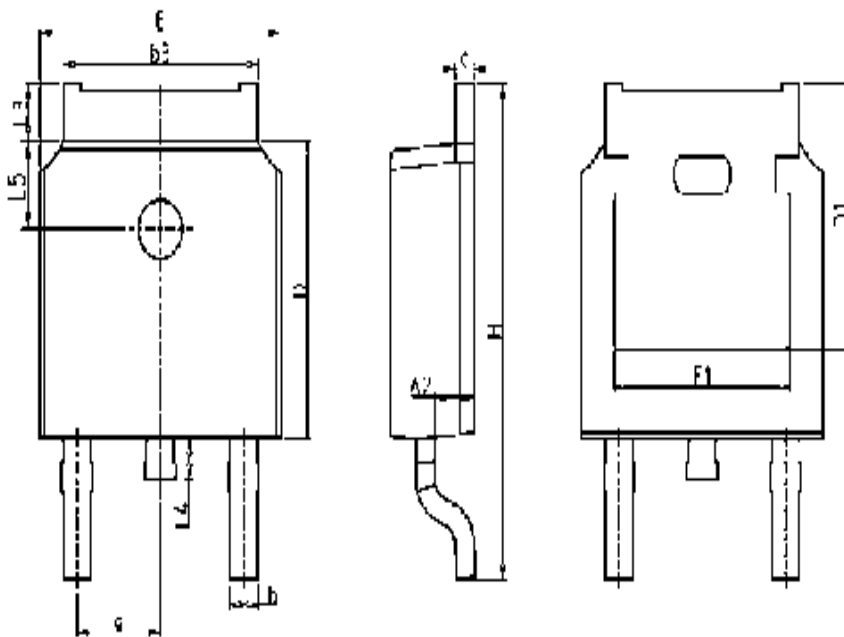
T_j-Junction Temperature (°C)





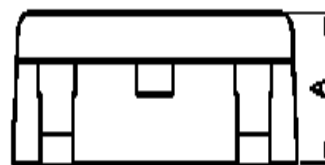
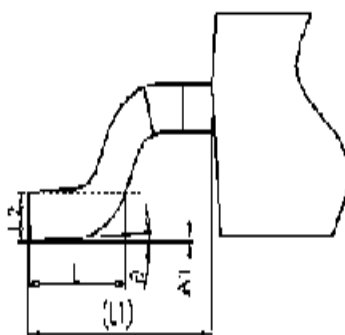
Device Per Unit

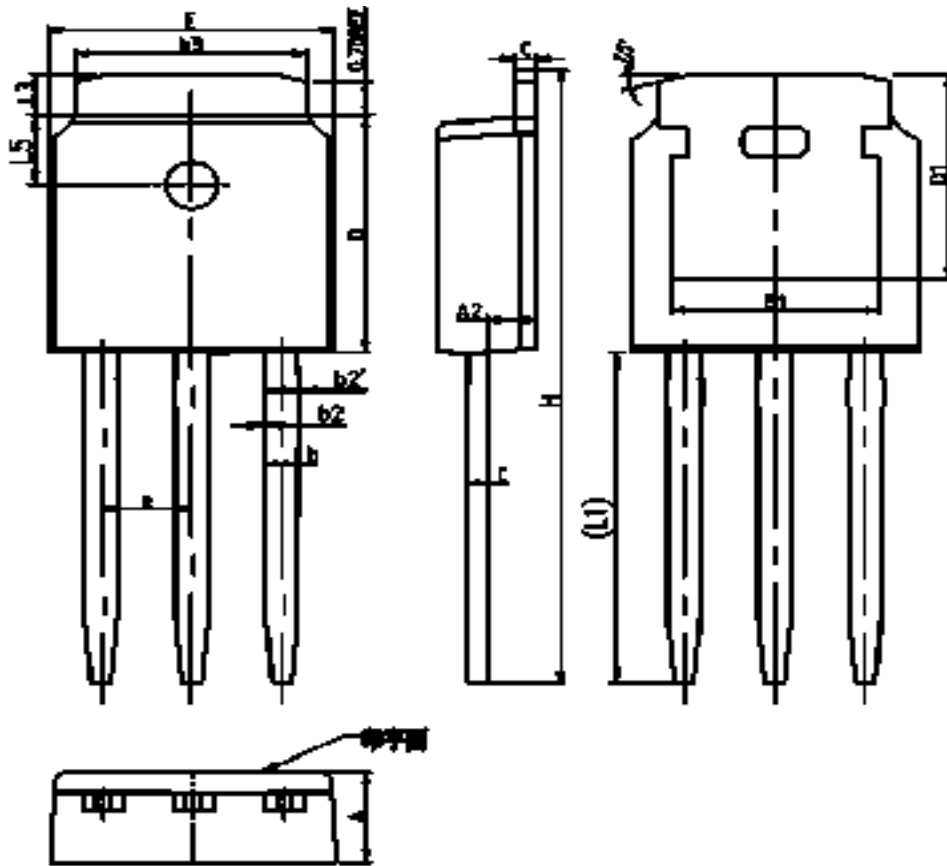
Package Type	Unit	Quantity
TO-252-2L	Tube	75
TO-252-2L	Reel	2500
TO-251-3L	Tube	75
TO-251-3S	Tube	75



COMMON DIMENSIONS

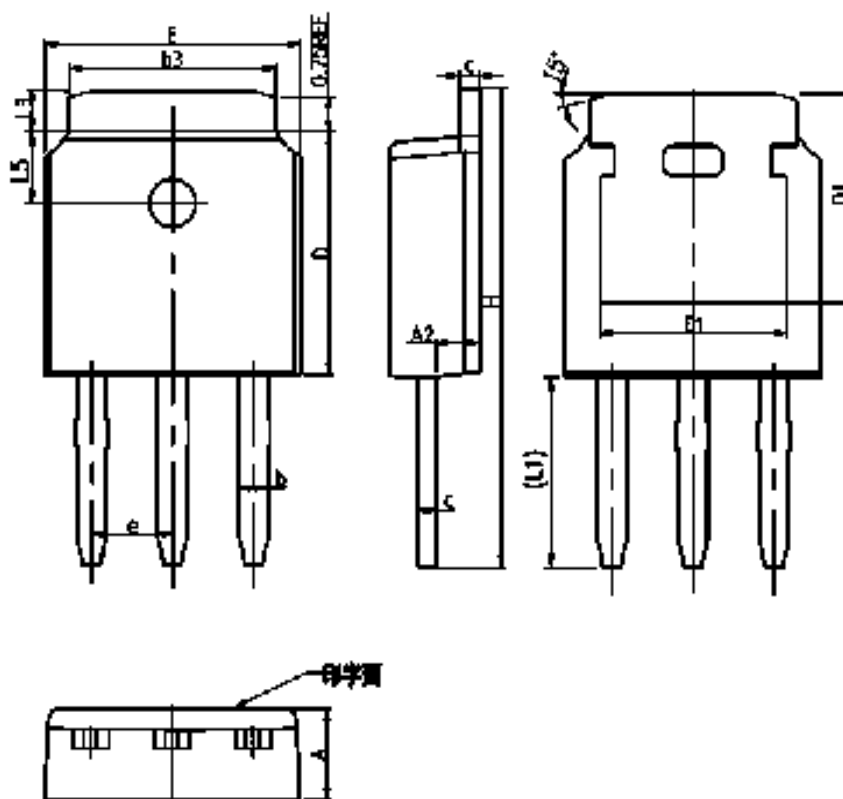
SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A1	0.00	-	0.20
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	9.40	10.10	10.50
L	1.38	1.50	1.75
L1	2.90REF		
L2	0.51BSC		
L3	0.88	-	1.28
L4	-	-	1.00
L5	1.65	1.80	1.95
θ	0°	-	8°





COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b2	0.00	0.04	0.10
b2'	0.00	0.04	0.10
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	16.22	16.52	16.82
L1	9.15	9.40	9.65
L3	0.88	1.02	1.28
L5	1.65	1.80	1.95



COMMON DIMENSIONS

SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.40
A2	0.97	1.07	1.17
b	0.68	0.78	0.90
b3	5.20	5.33	5.50
c	0.43	0.53	0.63
D	5.98	6.10	6.22
D1	5.30REF		
E	6.40	6.60	6.80
E1	4.63	-	-
e	2.286BSC		
H	10.00	11.22	11.44
L1	3.90	4.10	4.30
L3	0.88	1.02	1.28
L5	1.65	1.80	1.95



Table 1.SnPb Eutectic Process – Classification Temperatures (Tc)

	³	³
		≥
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2.Pb-free Process – Classification Temperatures (Tc)

	³	³	³
			≥
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm – 2.5 mm	260 °C	250 °C	245 °C
≥2.5 mm	250 °C	245 °C	245 °C

SOLDERABILITY	JESD-22, B102	5 Sec, 245°C
HOLT	JESD-22, A108	168 Hrs /500 Hrs /1000 Hrs, Bias @ 150°C
PCT	JESD-22, A102	96 Hrs, 100%RH, 2atm, 121°C
TCT	JESD-22, A104	500 Cycles, -55°C~150°C

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